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Maine Agricultural Experiment Station

BULLETIN No. 58.

DECEMBER, 1899.

FINANCES, METEOROLOGY, INDEX.

This Bulletin contains the acknowledgment of gifts to the Station in 1899, the Report of the Treasurer, the summary of the meteorological observations, and the index for the bulletins issued in 1899. Bulletins 48 to 58 make up the Fifteenth Annual Report of the Station.

Requests for the Bulletins should be addressed to the
AGRICULTURAL EXPERIMENT STATION,
Orono, Maine.

MAINE

AGRICULTURAL EXPERIMENT STATION

ORONO, MAINE.

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| | |
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THE STATION STAFF.

THE PRESIDENT OF THE UNIVERSITY.

| | |
|-------------------------------|----------------------------------|
| CHARLES D. WOODS | <i>Director</i> |
| JAMES M. BARTLETT | <i>Chemist</i> |
| LUCIUS H. MERRILL | <i>Chemist</i> |
| FRANCIS L. HARVEY | <i>Botanist and Entomologist</i> |
| FREMONT L. RUSSELL | <i>Veterinarian</i> |
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| GILBERT M. GOWELL | <i>Agriculturist</i> |
| LUCIUS J. SHEPARD | <i>Assistant Horticulturist</i> |
| ORA W. KNIGHT | <i>Assistant Chemist</i> |
| ANDREW J. PATTEN | <i>Assistant Chemist</i> |
| EDWARD R. MANSFIELD | <i>Assistant Chemist</i> |

ACKNOWLEDGMENTS.

Acknowledgment is hereby made for the following gifts to the Station during 1899:

Set Economic Seeds, Seed Potatoes—United States Department of Agriculture.

Apple Cions—Jules Lagace, Van Buren.

Kerowater Spraying Apparatus—Gould's Manufacturing Co., Seneca Falls, N. Y.

Copper Electric Sprayer—A. L. & E. F. Goss, Lewiston.

Spray Pump—Deming Co., Salem, Ohio.

Spray Pump—Morrell & Morley, Benton Harbor, Mich.

Paragrene—F. L. Lavenburg, New York City.

Green Arsenite, Green Arsenoid, Pink Arsenoid—Adler Color and Chemical Works, N. Y.

Prepared Bordeaux Mixture and Bordeaux Paint—Lennox Spraying Co., Pittsfield, Mass.

Special Laurel Green—Nichols Chemical Company, N. Y.

Sulphate, Muriate and Carbonate of Potash, and Kainit—German Kali Works, New York City.

Guano and Bone—Bowker Fertilizing Co., Boston, Mass.

Low Farm Wagon—Electric Wheel Co., Quincy, Ill.

Reliable Nest Box—M. L. Newell, Denver, Colo.

Calf Dehorner—Bullock Manufacturing Co., Flint, Mich.

Scythes—Nolin Manufacturing Co., Skowhegan.

Ground Oyster Shells—Poultry and Farm Supply Co., Boston.

The following newspapers and other publications are kindly donated to the Station by the publishers:

Agricultural Epitomist, Indianapolis, Ind.

Agricultural Gazette, Sidney, New South Wales.

American Cultivator, Boston, Mass.

American Fertilizer, Philadelphia, Pa.

American Florist, Chicago, Ill.

American Gardening, New York City.

American Grange Bulletin, Cincinnati, O.

American Grocer, New York City.
American Miller, Chicago, Ill.
Baltimore Weekly Sun, Baltimore, Md.
Bangor Weekly Commercial, Bangor, Me.
Breeders' Journal, Himrods, N. Y.
Canadian Horticulturist, Grimsby, Ont.
Chronique Agricole, Lausanne, Switzerland.
Country Gentleman, Albany, N. Y.
Dairy World, Chicago, Ill.
Detroit Free Press, Detroit, Mich.
Elgin Dairy Report, Elgin, Ill.
Farm, Furnace and Factory, Roanoke, Va.
Farmer's Advocate, Burlington, Vt.
Farmer's Advocate, London, Ont.
Farmer's Guide, Huntington, Ind.
Farmer's Home, Dayton, O.
Farm Home, Springfield, Ill.
Farmers' Tribune, Des Moines, Iowa.
Farm and Home, Chicago, Ill.
Farm Journal, Philadelphia, Pa.
Farm-Poultry, Boston, Mass.
Farmer's Magazine, Springfield, Ill.
Farmer's Review, Chicago, Ill.
Farmer's Voice, Chicago, Ill.
Farming, Dayton, O.
Florists Exchange, New York City.
Forester, Princeton, N. J.
Fruit, Dunkirk, N. Y.
Green's Fruit Grower, Rochester, N. Y.
Hoard's Dairyman, Ft. Atkinson, Wis.
Holstein Friesian Register, Brattleboro, Vt.
Homestead, Des Moines, Iowa.
Horticultural Visitor, Kinmundy, Ill.
Jersey Bulletin, Indianapolis, Ind.
Journal of the Royal Agricultural Society, London, England.
Louisiana Planter, New Orleans, La.
Lewiston Weekly Journal, Lewiston, Maine.
Maine Farmer, Augusta, Me.
Mark Lane's Express, London, England.
Market Basket, Philadelphia, Pa.

Market Garden, Minneapolis, Minn.
Massachusetts Ploughman, Boston, Mass.
Michigan Fruit Grower, Grand Rapids, Mich.
Mirror & Farmer, Manchester, N. H.
Montana Fruit Grower, Missoula, Mont.
National Farmer and Stock Grower, National Stock Yards, Ill.
National Rural and Family Magazine, Chicago, Ill.
New England Farmer, Boston, Mass.
New England Florist, Boston, Mass.
New England Homestead, Springfield, Mass.
New York Farmer, Port Jervis, N. Y.
New York Produce Review, New York City.
North American Horticulturist, Monroe, Mich.
Northern Leader, Fort Fairfield, Me.
Northwestern Miller, Minneapolis, Minn.
Ohio Farmer, Cleveland, Ohio.
Oregon Agriculturist, Portland, Oregon.
Pacific Bee, Sacramento, Cal.
Pacific Coast Dairyman, Tacoma, Wash.
Park and Cemetery, Chicago, Ill.
Practical Farmer, Philadelphia, Pa.
Public Ledger, Philadelphia, Pa.
Ruralist, Gluckheim, Md.
Rural Californian, Los Angeles, Cal.
Rural New Yorker, New York City.
Rural Topics, Morgan City, La.
Southern Farm Magazine, Baltimore, Md.
Southern Farmer, New Orleans, La.
Southern Planter, Richmond, Va.
Southwest, Springfield, Mo.
Southwestern Farmer, Wichita, Kans.
Strawberry Specialist, Kittrell, N. C.
Sugar Beet, Philadelphia, Pa.
Turf, Farm and Home, Waterville, Me.
Vick's Magazine, Rochester, N. Y.
Weekly Union, Manchester, N. H.
Western Agriculturist, Chicago, Ill.
Western Creamery, San Francisco, Cal.
Western Fruit Grower, St. Joseph, Mo.
The World, Vancouver, B. C.

METEOROLOGICAL OBSERVATIONS.

The instruments used at this Station are the same as those used in preceding years, and include: Wet and dry bulb thermometers; maximum and minimum thermometers; thermograph; rain-gauge; self-recording anemometer; vane and barometer. The observations at Orono now form an almost unbroken record of thirty-one years.

The noticeable features of the year at this point were the warm month of December, which was 7.33 degrees warmer than the average; and the small rainfall of April, August, and November. In August the only rain which fell was in the form of light showers, the precipitation in each case being less than one-hundredth of an inch. The total rainfall for the year was 10.66 inches below the average for thirty-one years.

For the first nine months of the year, observations were made at 7 A. M., 2 P. M., and 9 P. M. Since October 1 the morning and evening observations have been discontinued. Latitude 44°, 54', 2" N. Longitude 68°, 40', 11" W. Elevation above the sea, 150 feet.

METEOROLOGICAL SUMMARY FOR 1899.

Observations Made at the Maine Experiment Station.

| | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | Mean. | Total. |
|--------------------------------------------|----------|-----------|---------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|---------|--------|
| Highest barometer | 30.58 | 30.28 | 30.60 | 30.16 | 30.13 | 30.15 | 30.11 | 30.18 | 30.32 | 30.36 | 30.31 | 30.37 | 30.30 | ..... |
| Lowest barometer | 29.05 | 29.03 | 28.68 | 29.28 | 29.44 | 29.48 | 29.44 | 29.60 | 29.39 | 29.52 | 29.40 | 29.03 | 29.28 | ..... |
| Mean barometer..... | 29.86 | 29.75 | 29.77 | 29.83 | 29.84 | 29.78 | 29.75 | 29.84 | 29.88 | 30.04 | 29.80 | 29.84 | 29.83 | ..... |
| Highest temperature . | 49° | 52° | 51° | 84° | 80° | 87° | 91° | 93° | 88° | 76° | 58° | 57° | ..... | ..... |
| Lowest temperature | -21° | -16° | -3° | 18° | 26° | 37° | 41° | 40° | 23° | 22° | 8° | -9° | ..... | ..... |
| Mean temperature | 15° .95 | 16° .52 | 26° .47 | 43° .32 | 52° .27 | 62° .05 | 68° .40 | 66° .48 | 56° .59 | 49° .97 | 33° .99 | 28° .04 | 43° .34 | ..... |
| Mean temperature for 31 years. | 15° .98 | 19° .24 | 27° .56 | 40° .26 | 52° .38 | 61° .98 | 66° .97 | 65° .05 | 57° .02 | 45° .81 | 34° .21 | 20° .71 | 42° .26 | ..... |
| Total precipitation in inches. | 2.75 | 2.27 | 4.76 | .66 | 4.12 | 4.10 | 4.49 | trace. | 3.20 | 2.92 | 2.01 | 3.01 | ..... | 34.29 |
| Mean precipitation for 31 years | 4.22 | 4.05 | 4.19 | 2.85 | 3.46 | 3.61 | 3.36 | 3.64 | 3.37 | 4.00 | 4.44 | 3.76 | ..... | 44.95 |
| No. of days with precp. of. 01 in. or more | 5 | 7 | 11 | 2 | 9 | 13 | 10 | ..... | 5 | 7 | 6 | 9 | ..... | 84 |
| Snow fall in inches | 10 | 13.5 | 28 | 0.5 | ..... | ..... | ..... | ..... | ..... | ..... | 7.5 | 6.5 | ..... | 66.0 |
| Average snow fall for 31 years | 23.1 | 21.8 | 17.1 | 6.0 | ..... | ..... | ..... | ..... | ..... | 1.0 | 7.8 | 16.9 | ..... | 93.7 |
| Number of clear days | 13 | 12 | 8 | 19 | 17 | 14 | 11 | 18 | 12 | 12 | 10 | 10 | ..... | 156 |
| Number of fair days..... | 12 | 7 | 8 | 10 | 5 | 10 | 9 | 4 | 6 | 4 | 4 | 4 | ..... | 83 |
| Number of cloudy days | 6 | 9 | 15 | 1 | 9 | 6 | 11 | 9 | 12 | 15 | 16 | 17 | ..... | 126 |
| Total movement of wind in miles..... | 6898 | 6744 | 8241 | 5391 | 6832 | 5547 | 5321 | 4352 | 5500 | 5021 | 4857 | 5489 | ..... | ..... |

REPORT OF THE TREASURER.

Maine Agricultural Experiment Station in account with the United States appropriation, 1898-9.

DR.

To receipts from the Treasurer of the United States as per appropriation for the fiscal year ending June 30, 1899, as per act of Congress approved March 2, 1887..... \$15,000 00

CR.

By salaries:

| | | |
|------------------------------------------------|------------|------------|
| (a) Director and administration officers | \$2,194 26 | |
| (b) Scientific staff..... | 4,493 48 | |
| (c) Assistants to scientific staff..... | 1,215 13 | |
| (d) Special and temporary services..... | 51 96 | |
| Total | | \$7,954 83 |

Labor:

| | | |
|-----------------------------|----------|----------|
| (a) Monthly employees | \$450 00 | |
| (b) Daily employees..... | 1,319 66 | |
| Total | | 1,769 66 |

Publications:

| | |
|-----------------------------------------------|--------|
| For envelopes for bulletins and reports | 229 93 |
| Postage and stationery..... | 357 61 |
| Freight and express | 154 62 |
| Heat, light and water..... | 829 67 |

Chemical supplies:

| | | |
|--------------------------|----------|--------|
| (a) Chemicals | \$197 06 | |
| (b) Other supplies | 201 18 | |
| Total | | 398 24 |

Seeds, plants and sundry supplies:

| | | |
|------------------------|---------|--------|
| (a) Agricultural..... | \$57 17 | |
| (b) Horticultural..... | 260 43 | |
| (c) Botanical | 10 00 | |
| (e) Miscellaneous..... | 83 50 | |
| Total | | 411 10 |

| | |
|----------------------------------------|---------|
| Fertilizers | \$71 45 |
| Feeding stuffs | 486 82 |
| Library | 273 83 |
| Tools, implements, and machinery | 544 42 |
| Furniture and fixtures..... | 242 09 |
| Scientific apparatus..... | 42 93 |

Live stock:

| | | |
|-------------------|----------|----------|
| (e) Poultry | \$154 00 | |
| (f) Sundries..... | 143 55 | |
| Total | | \$297 55 |

Traveling expenses:

| | | |
|-----------------------------------------|----------|--------|
| (a) In supervision of Station work..... | \$118 77 | |
| (b) In attending various meetings... | 60 48 | |
| Total | | 179 25 |

Buildings and repairs:

| | | |
|-----------------------------|--------|-------------|
| (a) New buildings | 750 00 | |
| Total | | \$15,000 00 |

ISAIAH K. STETSON, *Treasurer.*

I, the undersigned, duly appointed Auditor of the Corporation, do hereby certify that I have examined the books of the Maine Agricultural Experiment Station for the fiscal year ending June 30, 1899; that I have found the same well kept and classified as above, and that the receipts for the year from the Treasurer of the United States are shown to have been \$15,000.00, and the corresponding disbursements, \$15,000.00; for all of which proper vouchers are on file and have been examined by me and found correct.

And I further certify that the expenditures have been solely for the purposes set forth in the act of Congress approved March 2, 1887.

A. W. HARRIS, *Auditor.*

Maine Agricultural Experiment Station in account with Fertilizer Inspection for the year ending December 31, 1899.

DR.

| | |
|-------------------------------|------------|
| To receipts for licenses..... | \$2,805 00 |
|-------------------------------|------------|

CR.

| | |
|-----------------------------------------|------------|
| By balance from account of 1898..... | \$20 04 |
| Collection and analyses of samples..... | 1,831 27 |
| Executive and office expenses..... | 700 00 |
| Balance to account of 1900..... | 253 69 |
| | \$2,805 00 |

Maine Agricultural Experiment Station in account with Feed Inspection for the year ending December 31, 1899.

DR.

| | |
|--------------------------------------------|------------|
| To receipts for inspection tags, 1899..... | \$2,112 19 |
| Balance to account of 1899..... | 786 07 |
| | \$2,898 26 |

CR.

| | |
|-------------------------------------------|------------|
| By balance carried from 1898 account..... | \$1,014 01 |
| Collection and analyses of samples..... | 773 48 |
| Tags | 410 77 |
| Executive and office expenses..... | 700 00 |
| | 2,898 26 |

Maine Agricultural Experiment Station in account with Creamery Inspection
for the year ending December 31, 1899.

DR.

| | |
|-----------------------------------------|---------|
| To fees for calibrating glassware | \$53 34 |
|-----------------------------------------|---------|

CR.

| | |
|----------------------------------------|---------|
| By expense calibrating glassware | \$53 34 |
|----------------------------------------|---------|

Maine Agricultural Experiment Station in account with "General Account" for
the year ending June 30, 1899.

DR.

| | | |
|----------------------------------|-----------------|------------|
| To balance from 1897-8 | \$798 54 | |
| Sales of produce, etc. | <u>2,425 58</u> | \$3,224 12 |

CR.

| | | |
|-----------------------------------------|-----------------|----------|
| By labor | \$292 54 | |
| Freight and express | 32 10 | |
| Seeds, plants, and sundry supplies..... | 75 23 | |
| Feeding stuffs..... | 61 57 | |
| Library | 10 90 | |
| Tools, implements and machinery..... | 30 79 | |
| Furniture and fixtures..... | 8 10 | |
| Scientific apparatus | 43 13 | |
| Live stock | 114 25 | |
| Traveling expenses..... | 25 28 | |
| Contingent (chiefly insurance)..... | 424 01 | |
| Buildings and repairs | 800 93 | |
| Balance to 1899-1900 account..... | <u>1,305 29</u> | 3,224 12 |